

WHAT IS CLAIMED IS:

1. An image forming apparatus which includes image input means for scanning an original and converting a scanned image into image data, image
5 output means for printing an image on a recording paper based on the image data converted by said image input means, and image repeat means for performing an image repeat process to cause said image output means to form a plurality of a part or all of the image
10 data on one recording paper, comprising:

margin adding means for adding a margin between the plural formed images when the image repeat process is performed by said image repeat means.

15 2. An image forming apparatus according to Claim 1, further comprising setting means capable of selecting and setting whether or not to use said margin adding means when the image repeat process is performed by said image repeat means.

20 3. An image forming apparatus according to Claim 2, wherein said setting means is provided on an operation unit which is used for user's operations and displays of various operation states.

25 4. An image forming apparatus according to Claim 2, further comprising judgment means for

judging whether or not to perform the image repeat
process to the part or all of the image data
converted by said image input means, when the image
repeat process is performed by said image repeat
5 means.

5. An image forming apparatus according to
Claim 4, further comprising image size determination
means for determining a size of the image to which
10 the image repeat process is performed, when it is
judged by said judgment means that the image repeat
process is performed to the part of the image data
converted by said image input means.

15 6. An image forming apparatus according to
Claim 2, wherein said image repeat means performs the
image repeat process in each of a longitudinal and a
lateral direction on a same face of the one recording
paper.

20 7. An image forming apparatus according to
Claim 6, further comprising repeat number designation
means for designating the number of times of the
image repeat process in each of the longitudinal
25 direction and the lateral direction,

wherein said image repeat means performs the
image repeat process according to the number of times

designated by said repeat number designation means.

8. An image forming apparatus according to
Claim 6, further comprising repeat number
5 determination means for determining a size of the
image to which the image repeat process is performed
and designating the number of times of the image
repeat process in each of the longitudinal direction
and the lateral direction on the same face of the one
10 recording paper,

wherein said image repeat means performs the
image repeat process according to the number of times
determined by said repeat number determination means.

15 9. An image repeat method in an image forming
apparatus which includes an image input means for
scanning an original and converting a scanned image
into image data, an image output means for printing
an image on a recording paper based on the image data
20 converted by the image input means, and an image
repeat means for performing an image repeat process
to cause the image output means to form a plurality
of a part or all of the image data on one recording
paper, said method comprising:

25 a setting step capable of selecting and setting
whether or not to add a margin between the plural
image-repeated images when the image repeat process

is performed by the image repeat means; and

a margin adding step of adding the margin
between the plural formed images when the image
repeat process is performed by the image repeat means,
5 in a case where it is selected and set in said
setting step to add the margin between the plural
image-repeated images.

10. A program which is to execute an image
10 repeat method in an image forming apparatus which
includes an image input means for scanning an
original and converting a scanned image into image
data, an image output means for printing an image on
a recording paper based on the image data converted
15 by the image input means, and an image repeat means
for performing an image repeat process to cause the
image output means to form a plurality of a part or
all of the image data on one recording paper, said
method comprising:

20 a setting step capable of selecting and setting
whether or not to add a margin between the plural
image-repeated images when the image repeat process
is performed by the image repeat means; and

a margin adding step of adding the margin
25 between the plural formed images when the image
repeat process is performed by the image repeat means,
in a case where it is selected and set in said

setting step to add the margin between the plural image-repeated images.

11. A storage medium which computer-readably
5 stores a program to execute an image repeat method in an image forming apparatus which includes an image input means for scanning an original and converting a scanned image into image data, an image output means for printing an image on a recording paper based on
10 the image data converted by the image input means, and an image repeat means for performing an image repeat process to cause the image output means to form a plurality of a part or all of the image data on one recording paper, said method comprising:
15 a setting step capable of selecting and setting whether or not to add a margin between the plural image-repeated images when the image repeat process is performed by the image repeat means; and
a margin adding step of adding the margin
20 between the plural formed images when the image repeat process is performed by the image repeat means, in a case where it is selected and set in said setting step to add the margin between the plural image-repeated images.

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12. An image forming apparatus which has an image repeat function capable of performing a layout

process to arrange plural same data in a first direction on a same face of one recording paper and also arrange data same as the plural same data in a second direction on the same face of the one

5 recording paper, wherein

said image forming apparatus includes

a first layout mode that, in the image repeat function, the mutually adjacent same data arranged in the first direction on the same face of the one
10 recording paper are arranged with intervals added in the first direction, and also the mutually adjacent same data arranged in the second direction on the same face of the one recording paper are arranged with intervals added in the second direction, and

15 a second layout mode that, in the image repeat function; the mutually adjacent same data arranged in the first direction on the same face of the one recording paper are arranged without intervals in the first direction, and also the mutually adjacent same
20 data arranged in the second direction on the same face of the one recording paper are arranged without intervals in the second direction, and

said image forming apparatus comprises

a selector capable of selecting either one of
25 the first layout mode and the second layout mode in the image repeat function, and

a controller for causing to execute the first

layout mode in the image repeat function in a case
where the first layout mode is selected by said
selector, and causing to execute the second layout
mode in the image repeat function in a case where the
5 second layout mode is selected by said selector.

13. An image forming apparatus according to
Claim 12, further comprising:

a first setting unit for setting the number of
10 the same data arranged in the first direction on the
same face of the one recording paper in the image
repeat function; and

a second setting unit for setting the number of
the same data arranged in the second direction on the
15 same face of the one recording paper in the image
repeat function,

wherein, in the case where the first layout
mode is selected by said selector, said controller
causes to perform in the image repeat function the
20 layout process to arrange with the intervals added
the plural same data which are arranged in the first
direction on the same face of the one recording paper
and of which the number corresponds to the number of
the data set by said first setting unit, in the first
25 direction, and to arrange with the intervals added
the plural same data which are arranged in the second
direction on the same face of the one recording paper

and of which the number corresponds to the number of the data set by said second setting unit, in the second direction, and

in the case where the second layout mode is
5 selected by said selector, said controller causes to perform in the image repeat function the layout process to arrange without intervals the plural same data which are arranged in the first direction on the same face of the one recording paper and of which the
10 number corresponds to the number of the data set by said first setting unit, in the first direction, and to arrange without intervals the plural same data which are arranged in the second direction on the same face of the one recording paper and of which the
15 number corresponds to the number of the data set by said second setting unit, in the second direction.

14. An image forming apparatus which has an image repeat function capable of performing a layout
20 process to arrange plural same data in a first direction on a same face of one recording paper and also arrange data same as the plural same data in a second direction on the same face of the one recording paper, comprising:

25 a display controller for causing a display unit to perform a first display operation of enabling to select either one of a first layout mode that, in the

image repeat function, the mutually adjacent same data arranged in the first direction on the same face of the one recording paper are arranged with intervals added in the first direction, and also the mutually adjacent same data arranged in the second direction on the same face of the one recording paper are arranged with intervals added in the second direction, and a second layout mode that, in the image repeat function, the mutually adjacent same data arranged in the first direction on the same face of the one recording paper are arranged without intervals in the first direction, and also the mutually adjacent same data arranged in the second direction on the same face of the one recording paper are arranged without intervals in the second direction; and

a controller for causing to execute the first layout mode in the image repeat function in a case where the first layout mode is selected through the first display operation, and causing to execute the second layout mode in the image repeat function in a case where the second layout mode is selected through the first display operation,

wherein said display controller causes said display unit to perform the first display operation, causes said display unit to perform a second display operation in the image repeat function for setting

the number of the same data to be arranged in the first direction on the same face of the one recording paper, and causes said display unit to perform a third display operation in the image repeat function
5 for setting the number of the same data to be arranged in the second direction on the same face of the one recording paper,

in the case where the first layout mode is selected through the first display operation, said
10 controller causes to perform in the image repeat function the layout process to arrange with the intervals added the plural same data which are arranged in the first direction on the same face of the one recording paper and of which the number
15 corresponds to the number of the data set through the second display operation, in the first direction, and to arrange with the intervals added the plural same data which are arranged in the second direction on the same face of the one recording paper and of which
20 the number corresponds to the number of the data set through the third display operation, in the second direction, and

in the case where the second layout mode is selected through the first display operation, said
25 controller causes to perform in the image repeat function the layout process to arrange without intervals the plural same data which are arranged in

the first direction on the same face of the one
recording paper and of which the number corresponds
to the number of the data set through the second
display operation, in the first direction, and to
5 arrange without intervals the plural same data which
are arranged in the second direction on the same face
of the one recording paper and of which the number
corresponds to the number of the data set through the
third display operation, in the second direction.

10

15. A layout method for an image repeat
function capable of performing a layout process to
arrange plural same data in a first direction on a
same face of one recording paper and also arrange
15 data same as the plural same data in a second
direction on the same face of the one recording paper,
said method comprising:

a selection step of enabling to select either
one a first layout mode that, in the image repeat
20 function, the mutually adjacent same data arranged in
the first direction on the same face of the one
recording paper are arranged with intervals added in
the first direction, and also the mutually adjacent
same data arranged in the second direction on the
25 same face of the one recording paper are arranged
with intervals added in the second direction, and a
second layout mode that, in the image repeat function,

the mutually adjacent same data arranged in the first direction on the same face of the one recording paper are arranged without intervals in the first direction, and also the mutually adjacent same data arranged in the second direction on the same face of the one recording paper are arranged without intervals in the second direction; and

a control step of causing to execute the first layout mode in the image repeat function in a case where the first layout mode is selected in said selection step, and causing to execute the second layout mode in the image repeat function in a case where the second layout mode is selected in said selection step.

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16. A layout method according to Claim 15, further comprising:

a first setting step of setting the number of the same data arranged in the first direction on the same face of the one recording paper in the image repeat function; and

a second setting step of setting the number of the same data arranged in the second direction on the same face of the one recording paper in the image repeat function,

wherein, in the case where the first layout mode is selected in said selection step, said control

step causes to perform in the image repeat function the layout process to arrange with the intervals added the plural same data which are arranged in the first direction on the same face of the one recording paper and of which the number corresponds to the number of the data set in said first step, in the first direction, and to arrange with the intervals added the plural same data which are arranged in the second direction on the same face of the one recording paper and of which the number corresponds to the number of the data set in said second setting step, in the second direction, and

in the case where the second layout mode is selected in said selection step, said control step causes to perform in the image repeat function the layout process to arrange without intervals the plural same data which are arranged in the first direction on the same face of the one recording paper and of which the number corresponds to the number of the data set in said first setting step, in the first direction, and to arrange without intervals the plural same data which are arranged in the second direction on the same face of the one recording paper and of which the number corresponds to the number of the data set in said second setting step, in the second direction.

17. A layout method according to Claim 15,
wherein

the layout process in the image repeat function
can be performed by an image forming apparatus
5 capable of printing either one of image data sent
from a scanner and image data sent from a computer,
and

said selection step enables to select either
one of the first layout mode and the second layout
10 mode in the image repeat function through an
operation unit of the image forming apparatus.

18. A layout method according to Claim 15,
wherein

15 the layout process in the image repeat function
can be performed by an image forming apparatus
capable of printing image data sent from a computer,
and

said selection step enables to select either
20 one of the first layout mode and the second layout
mode in the image repeat function through an
operation unit of the computer.

19. A layout method according to Claim 15,
25 wherein

the layout process in the image repeat function
can be performed by a computer capable of outputting

image data printable by an image forming apparatus,
and

said selection step enables to select either
one of the first layout mode and the second layout
5 mode in the image repeat function through an
operation unit of the computer.

20. A program which is to execute a layout
method for an image repeat function capable of
10 performing a layout process to arrange plural same
data in a first direction on a same face of one
recording paper and also arrange data same as the
plural same data in a second direction on the same
face of the one recording paper, said method
15 comprising:

a selection step of enabling to select either
one a first layout mode that, in the image repeat
function, the mutually adjacent same data arranged in
the first direction on the same face of the one
20 recording paper are arranged with intervals added in
the first direction, and also the mutually adjacent
same data arranged in the second direction on the
same face of the one recording paper are arranged
with intervals added in the second direction, and a
25 second layout mode that, in the image repeat function,
the mutually adjacent same data arranged in the first
direction on the same face of the one recording paper

are arranged without intervals in the first direction,
and also the mutually adjacent same data arranged in
the second direction on the same face of the one
recording paper are arranged without intervals in the
5 second direction; and

a control step of causing to execute the first
layout mode in the image repeat function in a case
where the first layout mode is selected in said
selection step, and causing to execute the second
10 layout mode in the image repeat function in a case
where the second layout mode is selected in said
selection step.

21. A storage medium which computer-readably
15 stores a program to execute a layout method for an
image repeat function capable of performing a layout
process to arrange plural same data in a first
direction on a same face of one recording paper and
also arrange data same as the plural same data in a
20 second direction on the same face of the one
recording paper, said method comprising:

a selection step of enabling to select either
one a first layout mode that, in the image repeat
function, the mutually adjacent same data arranged in
25 the first direction on the same face of the one
recording paper are arranged with intervals added in
the first direction, and also the mutually adjacent

same data arranged in the second direction on the same face of the one recording paper are arranged with intervals added in the second direction, and a second layout mode that, in the image repeat function, 5 the mutually adjacent same data arranged in the first direction on the same face of the one recording paper are arranged without intervals in the first direction, and also the mutually adjacent same data arranged in the second direction on the same face of the one 10 recording paper are arranged without intervals in the second direction; and

a control step of causing to execute the first layout mode in the image repeat function in a case where the first layout mode is selected in said 15 selection step, and causing to execute the second layout mode in the image repeat function in a case where the second layout mode is selected in said selection step.

20 22. A layout method for an image repeat function capable of performing a layout process to arrange plural same data in a first direction on a same face of one recording paper and also arrange data same as the plural same data in a second 25 direction on the same face of the one recording paper, comprising:

a display control step of causing a display

unit to perform a first display operation of enabling
to select either one of a first layout mode that, in
the image repeat function, the mutually adjacent same
data arranged in the first direction on the same face
5 of the one recording paper are arranged with
intervals added in the first direction, and also the
mutually adjacent same data arranged in the second
direction on the same face of the one recording paper
are arranged with intervals added in the second
10 direction, and a second layout mode that, in the
image repeat function, the mutually adjacent same
data arranged in the first direction on the same face
of the one recording paper are arranged without
intervals in the first direction, and also the
15 mutually adjacent same data arranged in the second
direction on the same face of the one recording paper
are arranged without intervals in the second
direction; and

a control step of causing to execute the first
20 layout mode in the image repeat function in a case
where the first layout mode is selected through the
first display operation, and causing to execute the
second layout mode in the image repeat function in a
case where the second layout mode is selected through
25 the first display operation,

wherein said display control step causes the
display unit to perform the first display operation,

causes the display unit to perform a second display operation in the image repeat function for setting the number of the same data to be arranged in the first direction on the same face of the one recording paper, and causes the display unit to perform a third display operation in the image repeat function for setting the number of the same data to be arranged in the second direction on the same face of the one recording paper,

10 in the case where the first layout mode is selected through the first display operation, said control step causes to perform in the image repeat function the layout process to arrange with the intervals added the plural same data which are
15 arranged in the first direction on the same face of the one recording paper and of which the number corresponds to the number of the data set through the second display operation, in the first direction, and to arrange with the intervals added the plural same
20 data which are arranged in the second direction on the same face of the one recording paper and of which the number corresponds to the number of the data set through the third display operation, in the second direction, and

25 in the case where the second layout mode is selected through the first display operation, said control step causes to perform in the image repeat

function the layout process to arrange without
intervals the plural same data which are arranged in
the first direction on the same face of the one
recording paper and of which the number corresponds
5 to the number of the data set through the second
display operation, in the first direction, and to
arrange without intervals the plural same data which
are arranged in the second direction on the same face
of the one recording paper and of which the number
10 corresponds to the number of the data set through the
third display operation, in the second direction.

23. A layout method according to Claim 22,
wherein

15 the layout process in the image repeat function
can be performed by an image forming apparatus
capable of printing either one of image data sent
from a scanner and image data sent from a computer,
and

20 said display control step causes a display unit
of the image forming apparatus to perform the first
display operation, perform the second display
operation and perform the third display operation.

25 24. A layout method according to Claim 22,
wherein

the layout process in the image repeat function

can be performed by an image forming apparatus capable of printing at least any one of image data sent from a computer, and

5 said display control step causes a display unit of the computer to perform the first display operation, perform the second display operation and perform the third display operation.

25. A layout method according to Claim 22,
10 wherein

the layout process in the image repeat function can be performed by a computer capable of outputting image data printable by an image forming apparatus, and

15 said display control step causes a display unit of the computer to perform the first display operation, perform the second display operation and perform the third display operation.
ration and perform the third display operation.

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26. A program which is to execute a layout for an image repeat function capable of performing a layout process to arrange plural same data in a first direction on a same face of one recording paper and
25 also arrange data same as the plural same data in a second direction on the same face of the one recording paper, comprising:

a display control step of causing a display unit to perform a first display operation of enabling to select either one of a first layout mode that, in the image repeat function, the mutually adjacent same data arranged in the first direction on the same face of the one recording paper are arranged with intervals added in the first direction, and also the mutually adjacent same data arranged in the second direction on the same face of the one recording paper are arranged with intervals added in the second direction, and a second layout mode that, in the image repeat function, the mutually adjacent same data arranged in the first direction on the same face of the one recording paper are arranged without intervals in the first direction, and also the mutually adjacent same data arranged in the second direction on the same face of the one recording paper are arranged without intervals in the second direction; and

a control step of causing to execute the first layout mode in the image repeat function in a case where the first layout mode is selected through the first display operation, and causing to execute the second layout mode in the image repeat function in a case where the second layout mode is selected through the first display operation,

wherein said display control step causes the

display unit to perform the first display operation,
causes the display unit to perform a second display
operation in the image repeat function for setting
the number of the same data to be arranged in the
5 first direction on the same face of the one recording
paper, and causes the display unit to perform a third
display operation in the image repeat function for
setting the number of the same data to be arranged in
the second direction on the same face of the one
10 recording paper,

in the case where the first layout mode is
selected through the first display operation, said
control step causes to perform in the image repeat
function the layout process to arrange with the
15 intervals added the plural same data which are
arranged in the first direction on the same face of
the one recording paper and of which the number
corresponds to the number of the data set through the
second display operation, in the first direction, and
20 to arrange with the intervals added the plural same
data which are arranged in the second direction on
the same face of the one recording paper and of which
the number corresponds to the number of the data set
through the third display operation, in the second
25 direction, and

in the case where the second layout mode is
selected through the first display operation, said

control step causes to perform in the image repeat function the layout process to arrange without intervals the plural same data which are arranged in the first direction on the same face of the one
5 recording paper and of which the number corresponds to the number of the data set through the second display operation, in the first direction, and to arrange without intervals the plural same data which are arranged in the second direction on the same face
10 of the one recording paper and of which the number corresponds to the number of the data set through the third display operation, in the second direction.

27. A storage medium which computer-readably
15 stores a program to execute a layout method for an image repeat function capable of performing a layout process to arrange plural same data in a first direction on a same face of one recording paper and also arrange data same as the plural same data in a
20 second direction on the same face of the one recording paper, comprising:

a display control step of causing a display unit to perform a first display operation of enabling to select either one of a first layout mode that, in
25 the image repeat function, the mutually adjacent same data arranged in the first direction on the same face of the one recording paper are arranged with

intervals added in the first direction, and also the mutually adjacent same data arranged in the second direction on the same face of the one recording paper are arranged with intervals added in the second
5 direction, and a second layout mode that, in the image repeat function, the mutually adjacent same data arranged in the first direction on the same face of the one recording paper are arranged without intervals in the first direction, and also the
10 mutually adjacent same data arranged in the second direction on the same face of the one recording paper are arranged without intervals in the second direction; and

a control step of causing to execute the first
15 layout mode in the image repeat function in a case where the first layout mode is selected through the first display operation, and causing to execute the second layout mode in the image repeat function in a case where the second layout mode is selected through
20 the first display operation,

wherein said display control step causes the display unit to perform the first display operation, causes the display unit to perform a second display operation in the image repeat function for setting
25 the number of the same data to be arranged in the first direction on the same face of the one recording paper, and causes the display unit to perform a third

display operation in the image repeat function for setting the number of the same data to be arranged in the second direction on the same face of the one recording paper,

5 in the case where the first layout mode is selected through the first display operation, said control step causes to perform in the image repeat function the layout process to arrange with the intervals added the plural same data which are
10 arranged in the first direction on the same face of the one recording paper and of which the number corresponds to the number of the data set through the second display operation, in the first direction, and to arrange with the intervals added the plural same
15 data which are arranged in the second direction on the same face of the one recording paper and of which the number corresponds to the number of the data set through the third display operation, in the second direction, and

20 in the case where the second layout mode is selected through the first display operation, said control step causes to perform in the image repeat function the layout process to arrange without intervals the plural same data which are arranged in
25 the first direction on the same face of the one recording paper and of which the number corresponds to the number of the data set through the second

display operation, in the first direction, and to
arrange without intervals the plural same data which
are arranged in the second direction on the same face
of the one recording paper and of which the number
5 corresponds to the number of the data set through the
third display operation, in the second direction.